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##
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##  Pythonを用いて問題ごとのすべての特性関数とその値をとる時
##  の売り手=>買い手ペアを出力します.

problems = [
  [10,15,20,25,30,35],
  [10,15,25,20,30,35],
  [10,25,30,15,20,35]
]
pairs_patterns = [
    [[0,0],[1,1],[2,2]], [[0,0],[1,2],[2,1]],
    [[0,1],[1,2],[2,0]], [[0,1],[1,0],[2,2]],
    [[0,2],[1,0],[2,1]], [[0,2],[1,1],[2,0]],
]

def sv(s,b,p):
  hk = problems[p]
  buyers, sellers = b, s
  buyers_value, sellers_value = [hk[i] for i in buyers], [hk[i] for i in
sellers]
  values = {}
  for pp in pairs_patterns:
    pairs = ""
    t = []
    for p in pp:
      if len(sellers) > p[0] and len(buyers) > p[1]:
        pairs = pairs + "{%d=>%d}" % ( sellers[p[0]]+1, buyers[p[1]]+1 )
        t.append(max([buyers_value[p[1]] - sellers_value[p[0]],0]))
    values[pairs] = sum(t)

  m = max(values.values())
  if m > 0:
    all_max_pairs = "["+",".join([k for k,v in values.items() if v == m])+"]"
  else:
    all_max_pairs = "No Deal"

  print "v{%s,%s} = %d (%s)" % (
      ",".join([str(i+1) for i in s]),
      ",".join([str(i+1) for i in b]),
      max(values.values()),
      all_max_pairs)

for p in [0,1,2]:
  print "Problem:%d" % (p+1)
  for s in [[0],[1],[2],[0,1],[1,2],[0,2],[0,1,2]]:
    for b in [[3],[4],[5],[3,4],[4,5],[3,5],[3,4,5]]:
      sv(s,b,p)
```

Problem:1

v{1,4} = 15 ([{1=>4}])
v{1,5} = 20 ([{1=>5}])
v{1,6} = 25 ([{1=>6}])
v{1,4,5} = 20 ([{1=>5}])
v{1,5,6} = 25 ([{1=>6}])
v{1,4,6} = 25 ([{1=>6}])
v{1,4,5,6} = 25 ([{1=>6}])
v{2,4} = 10 ([{2=>4}])
v{2,5} = 15 ([{2=>5}])
v{2,6} = 20 ([{2=>6}])
v{2,4,5} = 15 ([{2=>5}])
v{2,5,6} = 20 ([{2=>6}])
v{2,4,6} = 20 ([{2=>6}])
v{2,4,5,6} = 20 ([{2=>6}])
v{3,4} = 5 ([{3=>4}])
v{3,5} = 10 ([{3=>5}])
v{3,6} = 15 ([{3=>6}])
v{3,4,5} = 10 ([{3=>5}])
v{3,5,6} = 15 ([{3=>6}])
v{3,4,6} = 15 ([{3=>6}])
v{3,4,5,6} = 15 ([{3=>6}])
v{1,2,4} = 15 ([{1=>4}])
v{1,2,5} = 20 ([{1=>5}])
v{1,2,6} = 25 ([{1=>6}])
v{1,2,4,5} = 30 ([{1=>5}{2=>4},{1=>4}{2=>5}])
v{1,2,5,6} = 40 ([{1=>5}{2=>6},{1=>6}{2=>5}])
v{1,2,4,6} = 35 ([{1=>4}{2=>6},{1=>6}{2=>4}])
v{1,2,4,5,6} = 40 ([{1=>5}{2=>6},{1=>6}{2=>5}])
v{2,3,4} = 10 ([{2=>4}])
v{2,3,5} = 15 ([{2=>5}])
v{2,3,6} = 20 ([{2=>6}])
v{2,3,4,5} = 20 ([{2=>5}{3=>4},{2=>4}{3=>5}])
v{2,3,5,6} = 30 ([{2=>6}{3=>5},{2=>5}{3=>6}])
v{2,3,4,6} = 25 ([{2=>6}{3=>4},{2=>4}{3=>6}])
v{2,3,4,5,6} = 30 ([{2=>6}{3=>5},{2=>5}{3=>6}])
v{1,3,4} = 15 ([{1=>4}])
v{1,3,5} = 20 ([{1=>5}])
v{1,3,6} = 25 ([{1=>6}])
v{1,3,4,5} = 25 ([{1=>5}{3=>4},{1=>4}{3=>5}])
v{1,3,5,6} = 35 ([{1=>5}{3=>6},{1=>6}{3=>5}])
v{1,3,4,6} = 30 ([{1=>6}{3=>4},{1=>4}{3=>6}])
v{1,3,4,5,6} = 35 ([{1=>5}{3=>6},{1=>6}{3=>5}])
v{1,2,3,4} = 15 ([{1=>4}])
v{1,2,3,5} = 20 ([{1=>5}])
v{1,2,3,6} = 25 ([{1=>6}])
v{1,2,3,4,5} = 30 ([{1=>5}{2=>4},{1=>4}{2=>5}])
v{1,2,3,5,6} = 40 ([{1=>5}{2=>6},{1=>6}{2=>5}])
v{1,2,3,4,6} = 35 ([{1=>4}{2=>6},{1=>6}{2=>4}])
v{1,2,3,4,5,6} = 45 ([{1=>4}{2=>5}{3=>6},{1=>5}{2=>6}{3=>4},{1=>5}{2=>4}{3=>6},
{1=>6}{2=>5}{3=>4},{1=>4}{2=>6}{3=>5},{1=>6}{2=>4}{3=>5}])

Problem:2

v{1,4} = 10 ([{1=>4}])
v{1,5} = 20 ([{1=>5}])
v{1,6} = 25 ([{1=>6}])
v{1,4,5} = 20 ([{1=>5}])
v{1,5,6} = 25 ([{1=>6}])
v{1,4,6} = 25 ([{1=>6}])
v{1,4,5,6} = 25 ([{1=>6}])
v{2,4} = 5 ([{2=>4}])
v{2,5} = 15 ([{2=>5}])
v{2,6} = 20 ([{2=>6}])
v{2,4,5} = 15 ([{2=>5}])
v{2,5,6} = 20 ([{2=>6}])
v{2,4,6} = 20 ([{2=>6}])
v{2,4,5,6} = 20 ([{2=>6}])
v{3,4} = 0 (No Deal)
v{3,5} = 5 ([{3=>5}])
v{3,6} = 10 ([{3=>6}])
v{3,4,5} = 5 ([{3=>5}])
v{3,5,6} = 10 ([{3=>6}])
v{3,4,6} = 10 ([{3=>6}])
v{3,4,5,6} = 10 ([{3=>6}])
v{1,2,4} = 10 ([{1=>4}])
v{1,2,5} = 20 ([{1=>5}])
v{1,2,6} = 25 ([{1=>6}])
v{1,2,4,5} = 25 ([{1=>5}{2=>4},{1=>4}{2=>5}])
v{1,2,5,6} = 40 ([{1=>5}{2=>6},{1=>6}{2=>5}])
v{1,2,4,6} = 30 ([{1=>4}{2=>6},{1=>6}{2=>4}])
v{1,2,4,5,6} = 40 ([{1=>5}{2=>6},{1=>6}{2=>5}])
v{2,3,4} = 5 ([{2=>4}])
v{2,3,5} = 15 ([{2=>5}])
v{2,3,6} = 20 ([{2=>6}])
v{2,3,4,5} = 15 ([{2=>5},{2=>5}{3=>4}])
v{2,3,5,6} = 25 ([{2=>6}{3=>5},{2=>5}{3=>6}])
v{2,3,4,6} = 20 ([{2=>6}{3=>4},{2=>6}])
v{2,3,4,5,6} = 25 ([{2=>6}{3=>5},{2=>5}{3=>6}])
v{1,3,4} = 10 ([{1=>4}])
v{1,3,5} = 20 ([{1=>5}])
v{1,3,6} = 25 ([{1=>6}])
v{1,3,4,5} = 20 ([{1=>5}{3=>4},{1=>5}])
v{1,3,5,6} = 30 ([{1=>5}{3=>6},{1=>6}{3=>5}])
v{1,3,4,6} = 25 ([{1=>6}{3=>4},{1=>6}])
v{1,3,4,5,6} = 30 ([{1=>5}{3=>6},{1=>6}{3=>5}])
v{1,2,3,4} = 10 ([{1=>4}])
v{1,2,3,5} = 20 ([{1=>5}])
v{1,2,3,6} = 25 ([{1=>6}])
v{1,2,3,4,5} = 25 ([{1=>5}{2=>4},{1=>4}{2=>5}])
v{1,2,3,5,6} = 40 ([{1=>5}{2=>6},{1=>6}{2=>5}])
v{1,2,3,4,6} = 30 ([{1=>4}{2=>6},{1=>6}{2=>4}])
v{1,2,3,4,5,6} = 40 ([{1=>5}{2=>6}{3=>4},{1=>6}{2=>5}{3=>4}])

Problem:3

v{1,4} = 5 ([{1=>4}])
v{1,5} = 10 ([{1=>5}])
v{1,6} = 25 ([{1=>6}])
v{1,4,5} = 10 ([{1=>5}])
v{1,5,6} = 25 ([{1=>6}])
v{1,4,6} = 25 ([{1=>6}])
v{1,4,5,6} = 25 ([{1=>6}])
v{2,4} = 0 (No Deal)
v{2,5} = 0 (No Deal)
v{2,6} = 10 ([{2=>6}])
v{2,4,5} = 0 (No Deal)
v{2,5,6} = 10 ([{2=>6}])
v{2,4,6} = 10 ([{2=>6}])
v{2,4,5,6} = 10 ([{2=>6}])
v{3,4} = 0 (No Deal)
v{3,5} = 0 (No Deal)
v{3,6} = 5 ([{3=>6}])
v{3,4,5} = 0 (No Deal)
v{3,5,6} = 5 ([{3=>6}])
v{3,4,6} = 5 ([{3=>6}])
v{3,4,5,6} = 5 ([{3=>6}])
v{1,2,4} = 5 ([{1=>4}])
v{1,2,5} = 10 ([{1=>5}])
v{1,2,6} = 25 ([{1=>6}])
v{1,2,4,5} = 10 ([{1=>5}{2=>4},{1=>5}])
v{1,2,5,6} = 25 ([{1=>6},{1=>6}{2=>5}])
v{1,2,4,6} = 25 ([{1=>6},{1=>6}{2=>4}])
v{1,2,4,5,6} = 25 ([{1=>6}{2=>4},{1=>6}{2=>5}])
v{2,3,4} = 0 (No Deal)
v{2,3,5} = 0 (No Deal)
v{2,3,6} = 10 ([{2=>6}])
v{2,3,4,5} = 0 (No Deal)
v{2,3,5,6} = 10 ([{2=>6}{3=>5},{2=>6}])
v{2,3,4,6} = 10 ([{2=>6}{3=>4},{2=>6}])
v{2,3,4,5,6} = 10 ([{2=>6}{3=>4},{2=>6}{3=>5}])
v{1,3,4} = 5 ([{1=>4}])
v{1,3,5} = 10 ([{1=>5}])
v{1,3,6} = 25 ([{1=>6}])
v{1,3,4,5} = 10 ([{1=>5}{3=>4},{1=>5}])
v{1,3,5,6} = 25 ([{1=>6}{3=>5},{1=>6}])
v{1,3,4,6} = 25 ([{1=>6}{3=>4},{1=>6}])
v{1,3,4,5,6} = 25 ([{1=>6}{3=>4},{1=>6}{3=>5}])
v{1,2,3,4} = 5 ([{1=>4}])
v{1,2,3,5} = 10 ([{1=>5}])
v{1,2,3,6} = 25 ([{1=>6}])
v{1,2,3,4,5} = 10 ([{1=>5}{3=>4},{1=>5}{2=>4}])
v{1,2,3,5,6} = 25 ([{1=>6}{3=>5},{1=>6}{2=>5}])
v{1,2,3,4,6} = 25 ([{1=>6}{3=>4},{1=>6}{2=>4}])
v{1,2,3,4,5,6} = 25 ([{1=>6}{2=>5}{3=>4},{1=>6}{2=>4}{3=>5}])